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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,884	02/11/2004	Jack J. Reilly	IR3709 NP	3393
31684	7590	04/30/2008	EXAMINER	
ARKEMA INC. PATENT DEPARTMENT - 26TH FLOOR 2000 MARKET STREET PHILADELPHIA, PA 19103-3222			FERGUSON, LAWRENCE D	
			ART UNIT	PAPER NUMBER
			1794	
			MAIL DATE	DELIVERY MODE
			04/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/776,884

Applicant(s)

REILLY ET AL.

Examiner

LAWRENCE D. FERGUSON

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed October 30, 2007. Claims 33-34 were canceled rendering claims 1-30 and 32 pending in this case.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections – 35 USC 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, the phrase, "substantially the same material" is indefinite. It is unclear how the two or more layers are made of substantially the same material. Either they are made of the same material or they are not. The term "substantially" is not defined by the claim and the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In claim 14, the phrase, "indices of refraction of adjacent layers are substantially the same" is indefinite. It is unclear how the indices of refraction of adjacent layers are the same. Either they are the same or they are different. The term "substantially" is not defined by the claim and the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections – 35 USC § 103(a)

5. Claims 1-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kito et al. (U.S. 5,585,425) as evidenced by <http://hyperphysics.phy-astr.gsu.edu/hbase/tables/indrf.html>.

Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer or colored and opaque layer on a transparent (light transmitting) substrate (column 12, line 46-67 and column 13, lines 14-22) where the colored layer, experiences color changes, as in claim 8. Kito discloses the composition may be colored and transparent by the addition of dye or transparent pigment in column 12 lines 49-52, which gives the colored light transmissive layer a principle color.

Kito discloses an undercoat layer and/or topcoat layer can be applied to the article (column 13, lines 40-61) where both are made of methacrylate material (column 13, lines 44-52 and column 14, lines 1-12) as in claims 5 and 12. Colorant can be added to the undercoating and top coating layer (column 14, lines 13-17) and the

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thermochromatic color layer can be in a transparent state (column 12, lines 46-54) as in claims 6-7.

Although Kito does not specifically disclose the thickness as in claim 1, thickness is an optimizable feature. In the absence of any evidence to the contrary, it would have been obvious to one of ordinary skill in the art to optimize the layers of the article because discovering the optimum or workable range of result effective variables involves only routine skill in the art. The thickness directly affects the flexibility and durability of the multilayer article. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215. Additionally, a change in thickness, such as a change in the size of the article, is generally within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Concerning claims 2-4, because Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer on a transparent (light transmitting) substrate with a colored undercoating and top coating, it is expected for at least one edge of the light transmitting layer to appear different in its color when viewed along the edge, which would change with respect to the viewing angle and appear to be a mix of the transparent colored layer, transparent layer and colored top or undercoating layer(s).

The article is a glass or plastic, with glass or plastic layers (column 21, lines 1-47) comprising acrylic resin and polymethyl methacrylate (column 5, lines 55-65 and column 13, lines 44-52) as in claim 9-11. Kito discloses the article has a three-dimensional form which is applicable to toys and decorative goods (column 25, lines 1-

5) as in claims 28-30. In claim 29, the phrase, "suitable for a display, consumer product, or decorative support for an object" constitutes a 'capable of' limitation and that such a recitation that an element is 'capable of' performing a function is not a positive limitation but only requires the ability to so perform.

Concerning claim 13, because the thermochromatic color layer can be in a transparent state and it is adjacent to a transparent layer, there are at least two adjacent light transmitting layers in Kito's article.

Concerning claims 14-15 and 23, the transparent substrate is made of methacrylate material and the undercoating is made of methacrylate material (column 13, lines 14-20 and 44-48). Because the transparent substrate and undercoating are made of similar materials, it appears the indices of refraction of these layers are substantially the same within about 0.5 of each other. The index of refraction of methacrylate materials are conventionally greater than air, which has an index of refraction of about 1.0, as in claims 16-17. In claim 23, the phrase, "said two or more layers are coextruded" introduce a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Concerning claim 18, the phrase, "having a depth measured from said edge" appears to introduce a process limitation to the product claim. The patentability of a

product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims. Example 1 of Kito shows a film with a varying thickness of the thermochromatic color layer, giving the structure a varying depth.

In claims 19 and 20, the phrases, "by cuts through said layers" and "produced by coextrusion or fusion bonding of said layers" introduces process limitations to the product claims. In claim 23, the phrase, "wherein said two or more layers are coextruded" also introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given no patentable weight in product claims.

Concerning claim 21, because Kito teachings a topcoating and undercoating layer, the layers they coat appear to be interlayer material.

Concerning claims 22 and 24-26, a solvent (liquid) is used to apply the thermochromic layer to the substrate layer, which is a ketone, such as acetone, which has a refractive index of about 1.36, according to <http://hyperphysics.phy-astr.gsu.edu/hbase/tables/indrf.html>. The index of refraction of the solvent appears to be lower than that of the thermochromic layer and substrate. The solvent used in Kito is

construed as being an interlayer before the structure is dried. Applicant claims an interlayer of liquid, but does not claim how long the liquid interlayer needs to be present in the structure.

Because the article of Kito is a layered article used to laminate or conceal substrates (column 1, lines 12-20), it is interpreted as a sheet, as in claim 27.

Concerning claim 32, it appears the article has a photochromic visual effect as it seems to turn dark when turned a certain way or exposed to light and returns to its normal transparency when the angle or light is removed.

Response to Arguments

6. The rejection made under 35 U.S.C. 112, first paragraph, is withdrawn due to Applicant amending cancelled claims 33-34, to include a high limit of 100mm, which has been incorporated in claim 1.

The rejection made under 35 U.S.C. 102(b) as being anticipated by Kito et al. (U.S. 5,585,425) is withdrawn due to Applicant amending claim 1 to include the limitations of cancelled claims 33-34.

Applicant's arguments of the rejection made under 35 U.S.C. 103(a) as being unpatentable over Kito et al. (U.S. 5,585,425) has been considered but is unpersuasive. Applicant argues Kito does not recognize Applicant's angular multi-chromatic characteristics or geometric multi-chromatic characteristics, and thus such effects were not recognized by Kito. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which

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applicant relies (i.e., Kito does not recognize Applicant's angular multi-chromatic characteristics or geometric multi-chromatic characteristics) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Although Kito does not specifically disclose the thickness, thickness is an optimizable feature. Applicant fails to disclose any criticality with respect to the recited "thickness of from greater than 0.1 to 100mm." Therefore, in the absence of any evidence to the contrary, it would have been obvious to one of ordinary skill in the art to optimize the polymeric components of the impregnated paper because discovering the optimum or workable range involves only routine skill in the art. The thickness directly affects the flexibility of the article. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215. In the absence of evidence of criticality for the weight percentage of the polymer material by Applicant, it is obvious to optimize the material. Additionally, there is also no clear teaching away from the claimed thickness of the article by Kito, as the reference does not exclude any thickness for the layers of the article.

Applicant argues Kito does not disclose an article having two or more layers with a principle color. Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer or colored and opaque layer on a transparent (light transmitting) substrate (column 12, line 46-67 and column 13, lines 14-22) along with a colored undercoating and top coating (column 14, lines 13-17).

Applicant argues when the thermochromatic composition is transparent it is colorless. Kito discloses the composition may be colored and transparent by the addition of dye or transparent pigment in column 12 lines 49-52, which gives the light transmissive layer a principle color. In response to Applicant's arguments regarding the color of Kito's layers, Kito discloses:

a) a thermochromatic coating that is either opaque and colored or transparent and colored with the addition of transparent pigment (column 12, lines 50-54)

b) a transparent undercoat with colorant (column 13, lines 38-52 and column 14, lines 13-17)

c) a transparent top coat layer with colorant (column 13, lines 53-65 and column 14, lines 13-17).

Therefore, Kito discloses a light transmitting layer having a principle color that inherently appears as a different color when viewed along an edge.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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